NameDr.SubhadeepHalder
Assistant Professor

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Department of Geophysics
Banaras Hindu University
Varanasi-221005,UttarPradesh.

Education

Post Doc(2013-2016), Centre for Ocean-Land-Atmosphere Studies/Deptt.of Atmospheric, Oceanic andEarth Science, George Mason University, Fairfax, Virginia, USA
PhD(2013), Atmospheric and Space Science, Indian Institute of Tropical Meteorology, Pune, India
MTech(2006), Atmospheric Science, Savitribai Phule Pune University, Pune, India
M Sc(2004), Physics, Banaras Hindu University, Varanasi, India

Positions

Assistant Professor, K Banerjee Centre of Atmospheric and Ocean Studies, University of Allahabad, Prayagraj, India, 19 December 2016 - 12 June 2020
Scientist C, Indian Institute of Tropical Meteorology, Pune, India, 27 July 2016 – 16 December 2016
Postdoctoral Research Scientist, Departmentof Atmospheric, Oceanic andEarth Science, George Mason University, Fairfax, Virginia, USA
Research Associate, Indian Institute of Tropical Meteorology, Pune, India, 12 Nov 2012 - 19 September 2013

Research Interests

Land-climate interactions, development of coupled model and diagnostics
Physics and Dynamics ofSevere Convective phenomena
Variability and Predictability of Monsoons
Global and Regional Climate Modelling
Initialization of land and atmosphere in numerical models

Teaching

General Meteorology
Physics of Aerosols
Mathematical and Numerical Methods in Geophysics
Dynamic Meteorology
General Circulation
Numerical Weather Prediction
Laboratory Demonstration of the Theory of General Circulation
Computer Programming

Publications

Research papers: 19 (18 international, average Impact Factor: 3.86)
Conference/Workshop presentations: 28
Invited lectures: 6

Curriculum Vitae of Dr. Subhadeep Halder

1. Name: Dr. Subhadeep Halder
Assistant Professor (Meteorology)

Affiliation
Department of Geophysics
Institute of Science
Banaras Hindu University
Varanasi-221005, Uttar Pradesh.

Dept. profile: https://new.bhu.ac.in/Site/FacultyProfile/1_154?FA000938
Publications: https://scholar.google.co.in/citations?user=2SPrlZ8AAAAJ&hl=en
Publons profile: https://publons.com/researcher/1348203/subhadeep-halder/

ORCID ID: 0000-0003-1571-3356; Scopus ID: 36241527600; Researcher ID: Y-1887-2019

2. Email and contact number:

subhadeeph@gmail.com
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TeleFax: +91(542) 6702949 (Off.)
Phone: +91 9975664260 (Mob.)

3. Gender: Male; **Languages:** English, Hindi, Bengali

4. Education

No.	Degree	Year	Subject/s	University/Institution
1.	Ph.D.	2013	Atmospheric and Space Science	Savitribai Phule Pune University, Pune/Indian Institute of Tropical Meteorology, Pune, Maharashtra, India
2.	M.Tech.	2006	Atmospheric Science	Savitribai Phule Pune University, Pune, Maharashtra, India
3.	M.Sc.	2004	Physics	Banaras Hindu University, Varanasi, Uttar Pradesh
4.	B.Sc.	2002	Physics (Hons.)	Ramakrishna Mission Residential College, Narendrapur, Kolkata, West Bengal, India (affiliated to the University of Calcutta)

5. Professional Experience

No.	Position held	Name of the Institute	From	To
1.	Assistant Professor	Department of Geophysics, Banaras Hindu University, Varanasi-221005, Uttar Pradesh, India	June 2020	Till date
2.	Assistant Professor	Centre of Atmospheric and Ocean Studies, University of Allahabad, Prayagraj-211002, Uttar Pradesh, India	Dec 2016	June 2020
3.	Scientist C	Indian Institute of Tropical Meteorology, Pune-411008, Maharashtra, India	Jul 2016	Dec 2016
4.	Postdoctoral Res. Scientist	Centre for Ocean-Land-Atmosphere Studies, George Mason University, Fairfax-22030, VA, USA	Sep 2013	Jul 2016
5.	Research Associate	Indian Institute of Tropical Meteorology, Pune-411008, Maharashtra, India	Nov 2012	Sep 2013
6.	CSIR Research Fellow (PhD)	Indian Institute of Tropical Meteorology, Pune-411008, Maharashtra, India	Oct 2008	Oct 2012
7.	IITM Research Fellow	Indian Institute of Tropical Meteorology, Pune-411008, Maharashtra, India	Apr 2006	Oct 2008

6. Teaching experience

(i) M.Tech. Earth System Science course, University of Allahabad

Introduction to Atmospheric Science, Fundamentals of Dynamic Meteorology, Monsoon Meteorology, Atmosphere-Land interaction, General Circulation of the Atmosphere, Numerical Weather Prediction

(ii) M.Sc.(Tech.) in Geophysics at the Banaras Hindu University

General Meteorology, Physical Meteorology, Mathematical and Numerical Methods in Geophysics, Dynamic Meteorology, General Circulation, Numerical Weather Prediction

7. Research Interests

- Land-climate interactions, development of coupled model and diagnostics
- Physics and Dynamics of Severe Convective phenomena
- Variability and Predictability of Monsoons
- Global and Regional Climate Modelling
- Initialization of land and atmosphere in numerical models

8. Professional recognition and awards

No.	Academic	Awarding Agency	Year
1.	*Young Scientist of the Year 2019 Award* at the 6th International Conference on Environment and Ecology at the University of Allahabad, Prayagraj, UP, India during 24-26 Feb 2020	International Foundation for Environment and Ecology, Rahara, Kolkata and Confederation of Indian Universities, New Delhi	2020
2.	*Member of the Board of Examiners* in Atmospheric Science	University of Calcutta, Kolkata, WB, India	2020 -
	Travel Grants		
1.	*International Travel Grant* for presenting a poster at the AGU Fall Meeting, San Francisco, CA,USA	CSIR, New Delhi	Dec 2012
2.	*International Travel Grant* for presenting a poster at an International Workshop in Madrid, Spain	SERB, DST, Govt. of India	Oct 2012
	Fellowships/Scholarships		
1.	*CSIR Fellowship* in the Joint CSIR-UGC National Eligibility Test (NET) in Earth, Atmospheric, Ocean and Planetary Sciences; AIR among top 25	CSIR, HRDG, New Delhi	Dec 2007
2.	IITM Scholarship for completion of M.Tech. Project	IITM, Pune	2005
3.	GATE in Physics	MHRD, GOI	2003
	Certificates of recognition		
1.	Scientific review of a TROP ICSU educational resource as a member of the YESS community	International Science Council (ISC)	2019

9. Significant professional achievements and contributions

- Contributed to a multi-institutional (MoES, GoI/IITM, GoI/IMD, GoI/UoA) project of establishing a deterministic framework for the forecast of lightning potential over India using the WRF in 2019 (http://srf.tropmet.res.in/srf/ts_prediction_system/index.php)
- Designed lectures (MOOC) on the topic "Climate Change: Adaptation and Mitigation Strategies for a better future" as part of the UNESCO's Open Education for a Better World mentoring programme 2018-2019 under the mentorship of Prof. Curt Newton, MIT, USA.
- Selected for postdoctoral research scientist position at the Pacific Northwest National Laboratory (PNNL) at Richland, WA, USA in March 2013 (*did not join*).

10. Publications

2020

20. Subhadeep Halder, Carla Gulizia, Jakub Walawender, Gaby Langendijk and Co-authors, 2021: Association of Groundwater changes and Climate: A review (*to be submitted*).

19. Shin, C., B. Huang, P.A. Dirmeyer, **S. Halder** and A. Kumar, 2020: Sensitivity of US drought prediction skill to land initial states, **J. Hydrometeorol.**, 21(9), 2793-2811. **(IF 3.891)**

18. Shin, C., B. Huang, P.A. Dirmeyer, **S. Halder** and A. Kumar, 2020: Impact of land initial states uncertainty on subseasonal surface air temperature prediction in CFSv2 reforecasts, **J. Hydrometeorol.**, 21(9), 2101-2121. **(IF 3.891)**

2018

17. Dirmeyer, P. A., **S. Halder** and R. J. Bombardi (2018), On the harvest of predictability from land surface states in a global forecast model, **J. Geophys. Res. Atmos.**, 123, 13111-13127. **(IF 3.821)**

16. Niroula, S., **S. Halder** and S. Ghosh (2018), Perturbations in initial soil moisture conditions: Impacts on hydrologic simulation in a large river basin, **J. Hydrol**., 561, 509-522, doi: 10.1016/j.jhydrol.2018.04.029. **(IF 4.405)**

15. Halder, S. P. A. Dirmeyer, L. Marx and J. L. Kinter III (2018), Impact of land surface initialization and land-atmosphere coupling on the prediction of the Indian summer monsoon with the CFSv2, **Front. Environ. Sci.**, 5, 92, pp. 1-19, doi: 10.3389/fenvs.2017.00092. **(IF 2.749)**

2017

14. Huang, B., C. Shin, J. Shukla, L. Marx, M. Balmaseda, **S. Halder**, P. Dirmeyer and J. L. Kinter III (2017), Reforecasting the ENSO events in the past fifty-seven years (1958-2014), **J. Climate**, 30, 7669-7693. **(IF 5.707)**

13. Halder, **S.** and P. A. Dirmeyer (2017), Relation of Eurasian snow cover and Indian summer monsoon rainfall: Importance of the delayed hydrological effect, **J. Climate**, 30(4), 1273-1289. **(IF 5.707)**

12. Dirmeyer, P. A. and **S. Halder** (2017), Application of the land-atmosphere coupling paradigm to the operational Climate Forecast System (CFSv2), **J. Hydrometeorol**,18(1),85-108. **(IF 3.891)**

2016

11. Dirmeyer, P. A., and **S. Halder** (2016), Sensitivity of numerical weather forecasts to initial soil moisture variations in CFSv2, **Wea. Forecasting**, 31(6), 1973-1983. **(IF 2.950)**

10. Bombardi, R.J., A. B. Tawfik, J. Manganello, L. Marx, C. Shin, **S. Halder**, E. Schneider, P. Dirmeyer, and J. Kinter (2016), The Heated Condensation Framework as a Convective Trigger in the NCEP Climate Forecast System version 2, **J. Adv. Model. Earth Syst**., 8, 1310-1329. **(IF 4.327)**

9. Halder, S., S. K. Saha, P. A. Dirmeyer, T. N. Chase and B.N. Goswami (2016), Investigating the impact of land-use land-cover change on Indian summer monsoon daily rainfall and temperature during 1951-2005 using a regional climate model, **Hydrol. Earth Sys. Sci.**, 20, 1765-1784. **(IF 5.153)**

2015

8. Halder, S., P. A. Dirmeyer and S. K. Saha (2015), Sensitivity of the mean and variability of Indian summer monsoon to land surface schemes in RegCM4: Understanding coupled land-atmosphere feedbacks, **J. Geophys. Res. Atmos.**, 120(18), 9437-9458. **(IF 3.821)**

7. Rai, A., S. K. Saha, S. Pokhrel, K. Sujith and **S. Halder** (2015), Influence of pre-onset land atmospheric conditions on the Indian summer monsoon rainfall variability, **J. Geophys. Res. Atmos.**, 120, 10, 4551-4563. **(IF 3.821)**

6. Bombardi, R.J., E. K. Schneider, L. Marx, **S. Halder**, B. Singh, A. Tawfik, P. A. Dirmeyer, and J. L. Kinter III (2015), Improvements in the representation of the Indian Summer Monsoon in the NCEP Climate Forecast System version 2, **Clim. Dyn.**, 45, 2485-2498. **(IF 4.486)**

2012

5. Saha, S.K., **S. Halder**, A. S. Rao and B. N. Goswami (2012), Modulation of intraseasonal oscillations by land-atmosphere feedback and contribution to the interannual variability of Indian summer monsoon, **J. Geophys. Res. Atmos.,** 117, D13101. **(IF 3.821)**

4. Halder, M., P. Mukhopadhyay, and **S. Halder** (2012), Study of the microphysical properties associated with the Monsoon Intraseasonal oscillation as seen from the TRMM observations, **Ann. Geophys.**, 30(6), 897-910. **(IF 1.731)**

2011

3. Saha, S.K., **S. Halder**, K. K. Kumar and B. N. Goswami (2011), Pre-onset land surface processes and 'internal' interannual variabilities of the Indian summer monsoon, **Clim. Dyn.**, 36, 2077-2089. **(IF 4.486)**

2. Patil, M.N., R.T. Waghmare, **S. Halder** and T. Dharmaraj (2011), Performance of Noah land surface model over the tropical semi-arid conditions in western India, **Atmos. Res.**, 99, 85-96. **(IF 4.676)**

2006

1. Halder, **S.**, P. Mukhopadhyay and H.A.K. Singh (2006), Idealized simulation of Norwester's over Kolkata using a high-resolution mesoscale model, Vatavaran, 30(2).

11. Synergistic activities

- Initiated a *Distinguished Lecture Series* in the Department of Geophysics of Banaras Hindu University for online lectures by eminent scientists in the field of Atmospheric Science.
- Initiated a bi-weekly *seminar-cum-weather-climate discussion* forum for students and research scholars to help them develop their presentation skills and facilitate interactions.
- Installed the 'Weather in a rotating tank' equipment in the laboratory for the demonstration of experiments based on General Circulation to the students of the University of Allahabad
- Arranged distinguished lectures by eminent scientist from the Central University, Rajasthan.
- Coordinated the first Indo-UK water Centre Workshop on 'Developing Hydro-climatic Services for Water Security' held at IITM, Pune during 29 Nov - 01Dec 2016 with the PI.
- Judged posters for the Outstanding Student Paper Awards at the AGU Fall meeting, Dec. 2015.

12. Invited lectures

- **Invited talk** on "Role of land surface initialization and land surface processes in weather, sub-seasonal and seasonal prediction" during International Conference on Advances in Applied Physics & Earth Sciences (CONIAPS XXVI) at the Deptt. of Physics, Manipal University, Jaipur on 20 Dec. 2020.
- **Invited talk** on "Protecting Our Species: Perceptions and Challenges" during "Earth Day Celebration" at the Dept. of Environmental Science, Univ. of Allahabad on 23 Apr. 2019.
- **Invited talk** on "Atmospheric and Ocean Science: Opportunities and Challenges" at the Department of Physics, Ramakrishna Mission Residential College, Narendrapur, Kolkata on 03 Feb. 2018.
- **Lead talk** titled "Role of land surface initialization in sub-seasonal to seasonal scale forecasts" at the TROPMET 2018 National Symposium, BHU, Varanasi, India in Oct. 2018.
- **Invited talk** on "International day for the preservation of the Ozone layer" at the Dept. of Economics, University of Allahabad on 16 Sep. 2017.
- **Invited talk** on "Land-climate interactions and its role in the prediction of the Indian summer monsoon" by **S. Halder** at IIT Bombay, Mumbai on 22 Dec. 2016.
- **Invited lectures** (three) during the ICTP-IITM-COLA/GMU co-sponsored Targeted Training Activity on "Modeling and Prediction of Asian Monsoons: Improving Physical Processes" at IITM, Pune, India during 9-20 Feb. 2015.

13. Reviewer for International Journals (22)

Nature Scientific Reports, Geophysical Research Letters, Journal of Climate, Journal of Hydrometeorology, Journal of Advances in Modelling Earth Systems, Journal of Geophysical Research-Atmospheres, Climate Dynamics, Science of the Total Environment, Quarterly Journal of Royal Meteorological Society, Theoretical and Applied Climatology, Meteorology and Atmospheric Physics, Journal of Hydrology, Journal of Hydro-environment Research, Atmospheric Research, Dynamics of Atmospheres and Oceans, Remote Sensing, Meteorology and Atmospheric Physics, Pure and Applied Geophysics, Climatic Change, Climate Research, Atmosphere, Journal of Earth System Science.

14. Research scholars and Masters (Project) students

Enrolled in PhD: 04
M.Tech. Earth System Science (Project) Dissertation: 02
M.Sc. Environmental Science Dissertation: 02

15. Computational skills and expertise

- Expertise in designing ensemble based experiments with the Climate Forecast System version2 (CFSv2) operational global forecast model of the NCEP, USA on the Stampede High-Performance Computing system (HPC) stationed at Texas, USA. Experienced in model code development for sensitivity studies and initialization, predictability and prediction experiments.
- Expert in regional climate model (ReGCM4 of ICTP, Italy), RAMS and WRF mesoscale models and the Noah, CLM and BATS land surface models including model code modification.
- Experienced in land surface initialization techniques using satellite and in-situ soil moisture data to improve prediction on the sub-seasonal to seasonal time scales.
- Experienced in land-atmosphere coupling metrics or diagnostics for using as tools for diagnosing and quantifying land-atmosphere feedback processes in coupled models .
- Skilled in Unix/Linux scripting, Fortran 90/95 programming and processing large volumes of climate data in different scientific formats using GrADS, Python, R, NCL, NCO, CDO.

16. Training Courses and Workshops

- **NRDMS-DST 21 days Training programme on Geospatial Technologies** during 10-30 May 2019 held at the University of Allahabad (equivalent to a UGC Refresher course).
- One-month **Induction Training programme** for newly recruited faculty at the UGC-Human Resource Development Centre, Guru Nanak Dev University, Amritsar under the *Pandit Madan Mohan Malviya National Mission on Teachers and Training (PMMMNMTT) scheme* of the MHRD, Govt. of India during 15-05-2018 through 13-06-2018.
- First Brainstorming meeting of DST-Mahanama Center of Excellence in Climate Change Research at BHU on 23 Feb. 2017.
- International Workshop on Representation of Physical Processes in Weather and Climate Models (INTROSPECT 2017) at IITM, Pune, India, 13-16 Feb. 2017.
- ESSO/MoES "Monsoon Mission Review Meeting", I.I.T.M. Pune, from 18-20 Feb. 2015.
- **"Shukla Symposium on Predictability in the Midst of Chaos",** at Maryland, USA, in the honor of Prof. J. Shukla, 23-24 Apr. 2015.
- **"International Conference** on Subseasonal to Seasonal Prediction" at NOAA, Maryland, USA, 10-13 Feb. 2014.
- **"Workshop on Land Surface Modeling in Support of NWP and Sub-Seasonal Climate Prediction"** at GMU, Fairfax, VA, 5-6 Dec. 2013.
- ESSO-IITM-ICTP Targeted Training Activity (TTA) on "*Intraseasonal Monsoon Predictability and Prediction*" at IITM, Pune, India, 14-25 Jan. 2013; lead and presented a talk based on a group project entitled "Potential predictability of zonal winds in the CFSv1 global model".
- Training course on "*Predictability of Atmosphere and Ocean*" by Prof. V. Krishnamurthy (COLA), at IITM, Pune, India, 9-20 Jan. 2012; lead and presented a group projecton "Predictability and forecast skill of precipitation in the CFSv1 global model over the Indian Ocean".
- Training workshop on "*Basic concepts on Micrometeorology, Land Surface Processes, its Observational Techniques and Analysis*", BIT, Mesra, India, 10-20 Feb. 2009.
- Course work conducted at IITM, Pune (Part-I) from 7 Aug. to 22 Dec. 2006 and (Part-II) from Aug. to Oct. 2007 in Atmospheric Science.

17. Conference/Workshop presentations *(* implies students or research scholar)*

28. *Oral:* **S. Halder**. Role of land surface initialization and land surface processes in weather, sub-seasonal and seasonal prediction, at the International Conference on "Advances in Applied Physics & Earth Sciences (CONIAPS XXVI)" in the Department of Physics, Manipal University, Jaipur, 18-20 Dec. 2020.

27. *Oral:* M. Halder, **S. Halder**, P. Mukhopadhyay, S. D. Pawar and A. C. Pandey. Prediction of lightning and hail storm over New Delhi, on 7 February 2019 using a cloud resolving model, at the 2nd International Workshop on "Extreme Severe Storms and Disaster Mitigation Strategy (ESSDMS2) organized at the Central University of Rajasthan, Rajasthan, 27-29 Feb. 2020.

26. *Poster*: M. Halder, R. Kanase, P. Mukhopadhyay, **S. Halder**, A.C. Pandey, M. Domkawale and S.D. Pawar. Latest approaches of Thunderstorm/Lightning and severe weather forecasting using high-resolution numerical model and GFS/GEFS, held at IITM Pune, 24-28 Nov. 2019.

25. *Oral*: M. Halder, **S. Halder**, S.D. Pawar, P. Mukhopadhyay, R. Kanase and A. C. Pandey. An Approach to predict Lightning using WRF Cloud Resolving Simulation, International Conference on Thunderstorm and Lightning in Tropics, Siksha 'O' Anusandhan (Deemed to be University), Odisha, 17-19 Jan. 2019.

24. **Oral*: **S. Halder**, D. Kanaujia* and M. Halder. On the role of land-atmosphere interaction in the simulation of Thunderstorms, International Conference on Thunderstorm and Lightning in Tropics, Siksha 'O' Anusandhan (Deemed to be University), Odisha, 17-19 Jan. 2019.

23. *Oral*: **S. Halder**. Role of land surface initialization in sub-seasonal to seasonal scale forecasts. TROPMET 2018 national symposium, BHU, Varanasi, 24-27 Oct. 2018.

22. **Oral*: D. Kanaujia* and **S. Halder**, Role of land-atmosphere interactions in convection and precipitation, TROPMET 2018 national symposium, BHU, Varanasi, 24-27 Oct. 2018.

21. **Poster*: Ajay Kumar* and **S. Halder**, Cloud radiation interactions over the Indian region, TROPMET 2018 national symposium, BHU, Varanasi, 24-27 Oct. 2018.

20. *Oral*: Dirmeyer, P. A. and **S. Halder**, On the harvest of predictability from land surface states, AGU Fall meeting, New Orleans, USA, 14 Dec. 2017.

19. *Oral*: **S. Halder**, Delayed hydrological effect of Eurasian snow cover on the Indian summer monsoon rainfall, International Symposium INTROMET-2017, SAC, Ahmedabad, 7 Nov. 2017.

18. *Oral:* "Land-climate interactions and its role in the prediction of the Indian summer monsoon" by **S. Halder**, P. A. Dirmeyer, J. Kinter and B.N. Goswami, IIT Mumbai, 22 Dec. 2016.

17. *Poster:* "Reforecasting the ENSO Events in the Past Fifty-Seven Years (1958-2014)" by B. Huang, C.S. Shin, J. Shukla, L. Marx, M. A. Balmaseda, **S. Halder**, P. Dirmeyer, J. L. Kinter III, AGU Fall Meeting, San Francisco, 12-16 Dec. 2016.

16. *Poster*: "Sensitivity of numerical forecasts to initial soil moisture variations in CFSv2: Implications for hydrological forecasts" by **S. Halder** and Paul A. Dirmeyer, India-UK Workshop on 'Developing Hydro- climatic Services for Water Security', IITM, Pune, 29 Nov. - 1 Dec. 2016.

15. *Oral:* "Impact of soil moisture variability on the Indian monsoon" by **S. Halder**, P. A. Dirmeyer, L. Marx and J. L. Kinter III, Second Annual Mason Water Research Symposium, George Mason University, 18 Mar. 2016.

14. *Oral:* "Impact of land surface initialization on seasonal forecast of the extremes of Indian summer monsoon" by **S. Halder**, P. A. Dirmeyer, L. Marx and J. L. Kinter III, at the 96th AMS meeting, N. Orleans, USA, Jan. 2016.

13. *Poster:*"Potential regions of strong land-atmosphere coupling based on the S2S project database: Implications for the Indian summer monsoon, by **S. Halder**, P. A. Dirmeyer, B. Cash and J. Adams, at the AGU Fall meeting, San Francisco, USA, 16 Dec. 2015.

12. *Poster:* "Relation of Eurasian snow cover and Indian summer monsoon rainfall: Delayed hydrological effect" by **S. Halder** and P. A. Dirmeyer, at the 40th Climate Diagnostics and Prediction Workshop, Denver, USA, 26-29 Oct. 2015.

11. Oral: "Ocean-Land-Atmosphere coupling and initialization strategies to improve CFSv2 and monsoon prediction" by J.L. Kinter III, R. Bombardi, M. Fennessy, B. Huang. **S. Halder**, L. Marx, E. K. Schneider, J. Shukla, R. Shukla, C. S. Shin and B. Singh, at the ESSO, Ministry of Earth Sciences, Govt. of India, National Monsoon Mission (NMM) Review Meeting, IITM, Pune, India, 19 Feb. 2015.

10. *Oral:* "Promises and prospects for predicting the South Asian monsoon" by J. L. Kinter III, P. A. Dirmeyer, B. Huang, E. K. Schneider, R. Bombardi, **S. Halder**, C. S. Shin, R. Shukla and B. Singh, 95th AMS meeting, Phoenix, 8 Jan. 2015.
9. *Oral:* "Confronting global land-atmosphere models with coupled process metrics" P. A. Dirmeyer, A. Tawfik, **S. Halder**, H. Norton, J. Wu. M. G. Bosilovich, J. A. Santanello, M.B. Ek and G. Balsamo, 95th AMS meeting, Phoenix, 5 Jan. 2015.
8. *Poster:* "Initialization and coupled land-atmosphere feedbacks in the CFSv2 model during the South Asian monsoon" by **S. Halder**, P.A. Dirmeyer, L. Marx and J.L. Kinter III, 95th AMS meeting, Phoenix, AZ, 8 Jan.2015.
7. *Oral:* "An initial assessment of coupled land-atmosphere memory in (and beyond) reanalysis" by P. A. Dirmeyer, Z. Guo, **S. Halder**, H. Norton and J. Wu, 39th Climate Diagnostics and Prediction Workshop, St. Louis, Missouri, 20 Oct. 2014.\
6. *Oral*: "Potential predictability of zonal winds in the model CFSv1", project by **S. Halder** and participants, at the ESSO-IITM-ICTP TTA at IITM, 14-25 Jan. 2013.
5. *Poster*: "Land Surface Processes and Internal Variability of Indian Summer Monsoon" by **S. Halder**, S. K. Saha, K. Krishna Kumar and B. N. Goswami, AGU 2012 Fall Meeting, San Francisco, USA, 3-7 Dec. 2012.
4. *Poster*: "Land-Atmosphere Feedback and Internal Variability of Indian Summer Monsoon" by **S. Halder**, S. K. Saha, K. Krishna Kumar and B. N. Goswami, International Workshop on "Land- Atmosphere Interactions at the Regional Scale", Madrid, Spain, 8-10 Oct. 2012.
3. *Poster*: "Changes in Indian summer monsoon rainfall and temperature induced by land-use land-cover during past 50 years" by **S. Halder** and S. K. Saha, International Conference OCHAMP, I.I.T.M., Pune, 21-25 Feb.,2012.
2. *Oral:* "Pre-onset land surface processes and 'internal' interannual variabilities of the Indian summer monsoon" by **S. Halder**, S. K. Saha, K. Krishna Kumar and B. N. Goswami, International EU-IndiaGrid2 Material Science, Climate Change & Interoperability Workshop, IIT, Delhi, India, 13-16 Dec. 2010.
1. *Poster:* "Studies of Nor'westers over Gangetic Bengal" by **S. Halder** and P. Mukhopadhyay, Raman Memorial Conference, organized by the Dept. of Physics, Univ. of Pune, Pune, India, 24-25 Feb. 2006.

18. Collaborators (International and national)

- Prof. Paul A. Dirmeyer, George Mason University, Fairfax, Virginia, USA, pdirmeye@gmu.edu
- Prof. James L. Kinter III, George Mason University, Fairfax, Virginia, USA, ikinter@gmu.edu
- Prof. Jagadish Shukla, George Mason University, Fairfax, Virginia, USA, jshukla@gmu.edu
- Prof. Bohua Huang, George Mason University, Fairfax, Virginia, USA
- Prof. Thomas N. Chase, CIRES, University of Colorado, Boulder, USA
- Prof. B. N. Goswami, SERB Distinguished Fellow, Cotton College, Gauhati University, Gauhati, Assam, India, bhupengoswami100@gmail.com

19. Professional Affiliations

- Life member of the Indian Meteorological Society, New Delhi; the Indian Geophysical Union, Hyderabad and the Indian Science Congress Association, Kolkata, India
- Member of the American Geophysical Union, USA, the American Meteorological Society and the European Geophysical Union, UK

Date: 30 Dec, 2020
Varanasi, UP, India

Sd./-
Dr. Subhadeep Halder

Curriculum Vitae of Dr. Subhadeep Halder

1. Name: Dr. Subhadeep Halder
Assistant Professor (Meteorology)

Affiliation
Department of Geophysics
Institute of Science
Banaras Hindu University
Varanasi-221005, Uttar Pradesh.

Dept. profile: https://new.bhu.ac.in/Site/FacultyProfile/1_154?FA000938
Publications: https://scholar.google.co.in/citations?user=2SPrlZ8AAAAJ&hl=en
Publons profile: https://publons.com/researcher/1348203/subhadeep-halder/

ORCID ID: 0000-0003-1571-3356; Scopus ID: 36241527600; Researcher ID: Y-1887-2019

2. Email and contact number:

subhadeeph@gmail.com
subhadeeph@bhu.ac.in
TeleFax: +91(542) 6702949 (Off.)
Phone: +91 9975664260 (Mob.)

3. Gender: Male; **Languages:** English, Hindi, Bengali

4. Education

No.	Degree	Year	Subject/s	University/Institution
1.	Ph.D.	2013	Atmospheric and Space Science	Savitribai Phule Pune University, Pune/Indian Institute of Tropical Meteorology, Pune, Maharashtra, India
2.	M.Tech.	2006	Atmospheric Science	Savitribai Phule Pune University, Pune, Maharashtra, India
3.	M.Sc.	2004	Physics	Banaras Hindu University, Varanasi, Uttar Pradesh
4.	B.Sc.	2002	Physics (Hons.)	Ramakrishna Mission Residential College, Narendrapur, Kolkata, West Bengal, India (affiliated to the University of Calcutta)

5. Professional Experience

No.	Position held	Name of the Institute	From	To
1.	Assistant Professor	Department of Geophysics, Banaras Hindu University, Varanasi-221005, Uttar Pradesh, India	June 2020	Till date
2.	Assistant Professor	Centre of Atmospheric and Ocean Studies, University of Allahabad, Prayagraj-211002, Uttar Pradesh, India	Dec 2016	June 2020
3.	Scientist C	Indian Institute of Tropical Meteorology, Pune-411008, Maharashtra, India	Jul 2016	Dec 2016
4.	Postdoctoral Res. Scientist	Centre for Ocean-Land-Atmosphere Studies, George Mason University, Fairfax-22030, VA, USA	Sep 2013	Jul 2016
5.	Research Associate	Indian Institute of Tropical Meteorology, Pune-411008, Maharashtra, India	Nov 2012	Sep 2013
6.	CSIR Research Fellow (PhD)	Indian Institute of Tropical Meteorology, Pune-411008, Maharashtra, India	Oct 2008	Oct 2012
7.	IITM Research Fellow	Indian Institute of Tropical Meteorology, Pune-411008, Maharashtra, India	Apr 2006	Oct 2008

6. Teaching experience

(i) M.Tech. Earth System Science course, University of Allahabad

Introduction to Atmospheric Science, Fundamentals of Dynamic Meteorology, Monsoon Meteorology, Atmosphere-Land interaction, General Circulation of the Atmosphere, Numerical Weather Prediction

(ii) M.Sc.(Tech.) in Geophysics at the Banaras Hindu University

General Meteorology, Physical Meteorology, Mathematical and Numerical Methods in Geophysics, Dynamic Meteorology, General Circulation, Numerical Weather Prediction

7. Research Interests

- Land-climate interactions, development of coupled model and diagnostics
- Physics and Dynamics of Severe Convective phenomena
- Variability and Predictability of Monsoons
- Global and Regional Climate Modelling
- Initialization of land and atmosphere in numerical models

8. Professional recognition and awards

No.	Academic	Awarding Agency	Year
1.	*Young Scientist of the Year 2019 Award* at the 6th International Conference on Environment and Ecology at the University of Allahabad, Prayagraj, UP, India during 24-26 Feb 2020	International Foundation for Environment and Ecology, Rahara, Kolkata and Confederation of Indian Universities, New Delhi	2020
2.	*Member of the Board of Examiners* in Atmospheric Science	University of Calcutta, Kolkata, WB, India	2020 -
	Travel Grants		
1.	*International Travel Grant* for presenting a poster at the AGU Fall Meeting, San Francisco, CA,USA	CSIR, New Delhi	Dec 2012
2.	*International Travel Grant* for presenting a poster at an International Workshop in Madrid, Spain	SERB, DST, Govt. of India	Oct 2012
	Fellowships/Scholarships		
1.	*CSIR Fellowship* in the Joint CSIR-UGC National Eligibility Test (NET) in Earth, Atmospheric, Ocean and Planetary Sciences; AIR among top 25	CSIR, HRDG, New Delhi	Dec 2007
2.	IITM Scholarship for completion of M.Tech. Project	IITM, Pune	2005
3.	GATE in Physics	MHRD, GOI	2003
	Certificates of recognition		
1.	Scientific review of a TROP ICSU educational resource as a member of the YESS community	International Science Council (ISC)	2019

9. Significant professional achievements and contributions

- Contributed to a multi-institutional (MoES, GoI/IITM, GoI/IMD, GoI/UoA) project of establishing a deterministic framework for the forecast of lightning potential over India using the WRF in 2019 (http://srf.tropmet.res.in/srf/ts_prediction_system/index.php)
- Designed lectures (MOOC) on the topic "Climate Change: Adaptation and Mitigation Strategies for a better future" as part of the UNESCO's Open Education for a Better World mentoring programme 2018-2019 under the mentorship of Prof. Curt Newton, MIT, USA.
- Selected for postdoctoral research scientist position at the Pacific Northwest National Laboratory (PNNL) at Richland, WA, USA in March 2013 (*did not join*).

10. Publications

2020

20. Subhadeep Halder, Carla Gulizia, Jakub Walawender, Gaby Langendijk and Co-authors, 2021: Association of Groundwater changes and Climate: A review (*to be submitted*).

19. Shin, C., B. Huang, P.A. Dirmeyer, **S. Halder** and A. Kumar, 2020: Sensitivity of US drought prediction skill to land initial states, **J. Hydrometeorol.**, 21(9), 2793-2811. **(IF 3.891)**

18. Shin, C., B. Huang, P.A. Dirmeyer, **S. Halder** and A. Kumar, 2020: Impact of land initial states uncertainty on subseasonal surface air temperature prediction in CFSv2 reforecasts, **J. Hydrometeorol.**, 21(9), 2101-2121. **(IF 3.891)**

2018

17. Dirmeyer, P. A., **S. Halder** and R. J. Bombardi (2018), On the harvest of predictability from land surface states in a global forecast model, **J. Geophys. Res. Atmos.**, 123, 13111-13127. **(IF 3.821)**

16. Niroula, S., **S. Halder** and S. Ghosh (2018), Perturbations in initial soil moisture conditions: Impacts on hydrologic simulation in a large river basin, **J. Hydrol**., 561, 509-522, doi: 10.1016/j.jhydrol.2018.04.029. **(IF 4.405)**

15. Halder, S. P. A. Dirmeyer, L. Marx and J. L. Kinter III (2018), Impact of land surface initialization and land-atmosphere coupling on the prediction of the Indian summer monsoon with the CFSv2, **Front. Environ. Sci.**, 5, 92, pp. 1-19, doi: 10.3389/fenvs.2017.00092. **(IF 2.749)**

2017

14. Huang, B., C. Shin, J. Shukla, L. Marx, M. Balmaseda, **S. Halder**, P. Dirmeyer and J. L. Kinter III (2017), Reforecasting the ENSO events in the past fifty-seven years (1958-2014), **J. Climate**, 30, 7669-7693. **(IF 5.707)**

13. Halder, **S.** and P. A. Dirmeyer (2017), Relation of Eurasian snow cover and Indian summer monsoon rainfall: Importance of the delayed hydrological effect, **J. Climate**, 30(4), 1273-1289. **(IF 5.707)**

12. Dirmeyer, P. A. and **S. Halder** (2017), Application of the land-atmosphere coupling paradigm to the operational Climate Forecast System (CFSv2), **J. Hydrometeorol**,18(1),85-108. **(IF 3.891)**

2016

11. Dirmeyer, P. A., and **S. Halder** (2016), Sensitivity of numerical weather forecasts to initial soil moisture variations in CFSv2, **Wea. Forecasting**, 31(6), 1973-1983. **(IF 2.950)**

10. Bombardi, R.J., A. B. Tawfik, J. Manganello, L. Marx, C. Shin, **S. Halder**, E. Schneider, P. Dirmeyer, and J. Kinter (2016), The Heated Condensation Framework as a Convective Trigger in the NCEP Climate Forecast System version 2, **J. Adv. Model. Earth Syst**., 8, 1310-1329. **(IF 4.327)**

9. Halder, S., S. K. Saha, P. A. Dirmeyer, T. N. Chase and B.N. Goswami (2016), Investigating the impact of land-use land-cover change on Indian summer monsoon daily rainfall and temperature during 1951-2005 using a regional climate model, **Hydrol. Earth Sys. Sci.**, 20, 1765-1784. **(IF 5.153)**

2015

8. Halder, S., P. A. Dirmeyer and S. K. Saha (2015), Sensitivity of the mean and variability of Indian summer monsoon to land surface schemes in RegCM4: Understanding coupled land-atmosphere feedbacks, **J. Geophys. Res. Atmos.**, 120(18), 9437-9458. **(IF 3.821)**

7. Rai, A., S. K. Saha, S. Pokhrel, K. Sujith and **S. Halder** (2015), Influence of pre-onset land atmospheric conditions on the Indian summer monsoon rainfall variability, **J. Geophys. Res. Atmos.**, 120, 10, 4551-4563. **(IF 3.821)**

6. Bombardi, R.J., E. K. Schneider, L. Marx, **S. Halder**, B. Singh, A. Tawfik, P. A. Dirmeyer, and J. L. Kinter III (2015), Improvements in the representation of the Indian Summer Monsoon in the NCEP Climate Forecast System version 2, **Clim. Dyn.**, 45, 2485-2498. **(IF 4.486)**

2012

5. Saha, S.K., **S. Halder**, A. S. Rao and B. N. Goswami (2012), Modulation of intraseasonal oscillations by land-atmosphere feedback and contribution to the interannual variability of Indian summer monsoon, **J. Geophys. Res. Atmos.,** 117, D13101. **(IF 3.821)**

4. Halder, M., P. Mukhopadhyay, and **S. Halder** (2012), Study of the microphysical properties associated with the Monsoon Intraseasonal oscillation as seen from the TRMM observations, **Ann. Geophys.**, 30(6), 897-910. **(IF 1.731)**

2011

3. Saha, S.K., **S. Halder**, K. K. Kumar and B. N. Goswami (2011), Pre-onset land surface processes and 'internal' interannual variabilities of the Indian summer monsoon, **Clim. Dyn.**, 36, 2077-2089. **(IF 4.486)**

2. Patil, M.N., R.T. Waghmare, **S. Halder** and T. Dharmaraj (2011), Performance of Noah land surface model over the tropical semi-arid conditions in western India, **Atmos. Res.**, 99, 85-96. **(IF 4.676)**

2006

1. Halder, **S.**, P. Mukhopadhyay and H.A.K. Singh (2006), Idealized simulation of Norwester's over Kolkata using a high-resolution mesoscale model, Vatavaran, 30(2).

11. Synergistic activities

- Initiated a *Distinguished Lecture Series* in the Department of Geophysics of Banaras Hindu University for online lectures by eminent scientists in the field of Atmospheric Science.
- Initiated a bi-weekly *seminar-cum-weather-climate discussion* forum for students and research scholars to help them develop their presentation skills and facilitate interactions.
- Installed the 'Weather in a rotating tank' equipment in the laboratory for the demonstration of experiments based on General Circulation to the students of the University of Allahabad
- Arranged distinguished lectures by eminent scientist from the Central University, Rajasthan.
- Coordinated the first Indo-UK water Centre Workshop on 'Developing Hydro-climatic Services for Water Security' held at IITM, Pune during 29 Nov - 01Dec 2016 with the PI.
- Judged posters for the Outstanding Student Paper Awards at the AGU Fall meeting, Dec. 2015.

12. Invited lectures

- **Invited talk** on "Role of land surface initialization and land surface processes in weather, sub-seasonal and seasonal prediction" during International Conference on Advances in Applied Physics & Earth Sciences (CONIAPS XXVI) at the Deptt. of Physics, Manipal University, Jaipur on 20 Dec. 2020.
- **Invited talk** on "Protecting Our Species: Perceptions and Challenges" during "Earth Day Celebration" at the Dept. of Environmental Science, Univ. of Allahabad on 23 Apr. 2019.
- **Invited talk** on "Atmospheric and Ocean Science: Opportunities and Challenges" at the Department of Physics, Ramakrishna Mission Residential College, Narendrapur, Kolkata on 03 Feb. 2018.
- **Lead talk** titled "Role of land surface initialization in sub-seasonal to seasonal scale forecasts" at the TROPMET 2018 National Symposium, BHU, Varanasi, India in Oct. 2018.
- **Invited talk** on "International day for the preservation of the Ozone layer" at the Dept. of Economics, University of Allahabad on 16 Sep. 2017.
- **Invited talk** on "Land-climate interactions and its role in the prediction of the Indian summer monsoon" by **S. Halder** at IIT Bombay, Mumbai on 22 Dec. 2016.
- **Invited lectures** (three) during the ICTP-IITM-COLA/GMU co-sponsored Targeted Training Activity on "Modeling and Prediction of Asian Monsoons: Improving Physical Processes" at IITM, Pune, India during 9-20 Feb. 2015.

13. Reviewer for International Journals (22)

Nature Scientific Reports, Geophysical Research Letters, Journal of Climate, Journal of Hydrometeorology, Journal of Advances in Modelling Earth Systems, Journal of Geophysical Research-Atmospheres, Climate Dynamics, Science of the Total Environment, Quarterly Journal of Royal Meteorological Society, Theoretical and Applied Climatology, Meteorology and Atmospheric Physics, Journal of Hydrology, Journal of Hydro-environment Research, Atmospheric Research, Dynamics of Atmospheres and Oceans, Remote Sensing, Meteorology and Atmospheric Physics, Pure and Applied Geophysics, Climatic Change, Climate Research, Atmosphere, Journal of Earth System Science.

14. Research scholars and Masters (Project) students

Enrolled in PhD: 04
M.Tech. Earth System Science (Project) Dissertation: 02
M.Sc. Environmental Science Dissertation: 02

15. Computational skills and expertise

- Expertise in designing ensemble based experiments with the Climate Forecast System version2 (CFSv2) operational global forecast model of the NCEP, USA on the Stampede High-Performance Computing system (HPC) stationed at Texas, USA. Experienced in model code development for sensitivity studies and initialization, predictability and prediction experiments.
- Expert in regional climate model (ReGCM4 of ICTP, Italy), RAMS and WRF mesoscale models and the Noah, CLM and BATS land surface models including model code modification.
- Experienced in land surface initialization techniques using satellite and in-situ soil moisture data to improve prediction on the sub-seasonal to seasonal time scales.
- Experienced in land-atmosphere coupling metrics or diagnostics for using as tools for diagnosing and quantifying land-atmosphere feedback processes in coupled models .
- Skilled in Unix/Linux scripting, Fortran 90/95 programming and processing large volumes of climate data in different scientific formats using GrADS, Python, R, NCL, NCO, CDO.

16. Training Courses and Workshops

- **NRDMS-DST 21 days Training programme on Geospatial Technologies** during 10-30 May 2019 held at the University of Allahabad (equivalent to a UGC Refresher course).
- One-month **Induction Training programme** for newly recruited faculty at the UGC-Human Resource Development Centre, Guru Nanak Dev University, Amritsar under the *Pandit Madan Mohan Malviya National Mission on Teachers and Training (PMMMNMTT) scheme* of the MHRD, Govt. of India during 15-05-2018 through 13-06-2018.
- First Brainstorming meeting of DST-Mahanama Center of Excellence in Climate Change Research at BHU on 23 Feb. 2017.
- International Workshop on Representation of Physical Processes in Weather and Climate Models (INTROSPECT 2017) at IITM, Pune, India, 13-16 Feb. 2017.
- ESSO/MoES "Monsoon Mission Review Meeting", I.I.T.M. Pune, from 18-20 Feb. 2015.
- **"Shukla Symposium on Predictability in the Midst of Chaos",** at Maryland, USA, in the honor of Prof. J. Shukla, 23-24 Apr. 2015.
- **"International Conference** on Subseasonal to Seasonal Prediction" at NOAA, Maryland, USA, 10-13 Feb. 2014.
- **"Workshop on Land Surface Modeling in Support of NWP and Sub-Seasonal Climate Prediction"** at GMU, Fairfax, VA, 5-6 Dec. 2013.
- ESSO-IITM-ICTP Targeted Training Activity (TTA) on "*Intraseasonal Monsoon Predictability and Prediction*" at IITM, Pune, India, 14-25 Jan. 2013; lead and presented a talk based on a group project entitled "Potential predictability of zonal winds in the CFSv1 global model".
- Training course on "*Predictability of Atmosphere and Ocean*" by Prof. V. Krishnamurthy (COLA), at IITM, Pune, India, 9-20 Jan. 2012; lead and presented a group projecton "Predictability and forecast skill of precipitation in the CFSv1 global model over the Indian Ocean".
- Training workshop on "*Basic concepts on Micrometeorology, Land Surface Processes, its Observational Techniques and Analysis*", BIT, Mesra, India, 10-20 Feb. 2009.
- Course work conducted at IITM, Pune (Part-I) from 7 Aug. to 22 Dec. 2006 and (Part-II) from Aug. to Oct. 2007 in Atmospheric Science.

17. Conference/Workshop presentations *(* implies students or research scholar)*

28. *Oral:* **S. Halder**. Role of land surface initialization and land surface processes in weather, sub-seasonal and seasonal prediction, at the International Conference on "Advances in Applied Physics & Earth Sciences (CONIAPS XXVI)" in the Department of Physics, Manipal University, Jaipur, 18-20 Dec. 2020.

27. *Oral:* M. Halder, **S. Halder**, P. Mukhopadhyay, S. D. Pawar and A. C. Pandey. Prediction of lightning and hail storm over New Delhi, on 7 February 2019 using a cloud resolving model, at the 2nd International Workshop on "Extreme Severe Storms and Disaster Mitigation Strategy (ESSDMS2) organized at the Central University of Rajasthan, Rajasthan, 27-29 Feb. 2020.

26. *Poster*: M. Halder, R. Kanase, P. Mukhopadhyay, **S. Halder**, A.C. Pandey, M. Domkawale and S.D. Pawar. Latest approaches of Thunderstorm/Lightning and severe weather forecasting using high-resolution numerical model and GFS/GEFS, held at IITM Pune, 24-28 Nov. 2019.

25. *Oral*: M. Halder, **S. Halder**, S.D. Pawar, P. Mukhopadhyay, R. Kanase and A. C. Pandey. An Approach to predict Lightning using WRF Cloud Resolving Simulation, International Conference on Thunderstorm and Lightning in Tropics, Siksha 'O' Anusandhan (Deemed to be University), Odisha, 17-19 Jan. 2019.

24. **Oral*: **S. Halder**, D. Kanaujia* and M. Halder. On the role of land-atmosphere interaction in the simulation of Thunderstorms, International Conference on Thunderstorm and Lightning in Tropics, Siksha 'O' Anusandhan (Deemed to be University), Odisha, 17-19 Jan. 2019.

23. *Oral*: **S. Halder**. Role of land surface initialization in sub-seasonal to seasonal scale forecasts. TROPMET 2018 national symposium, BHU, Varanasi, 24-27 Oct. 2018.

22. **Oral*: D. Kanaujia* and **S. Halder**, Role of land-atmosphere interactions in convection and precipitation, TROPMET 2018 national symposium, BHU, Varanasi, 24-27 Oct. 2018.

21. **Poster*: Ajay Kumar* and **S. Halder**, Cloud radiation interactions over the Indian region, TROPMET 2018 national symposium, BHU, Varanasi, 24-27 Oct. 2018.

20. *Oral*: Dirmeyer, P. A. and **S. Halder**, On the harvest of predictability from land surface states, AGU Fall meeting, New Orleans, USA, 14 Dec. 2017.

19. *Oral*: **S. Halder**, Delayed hydrological effect of Eurasian snow cover on the Indian summer monsoon rainfall, International Symposium INTROMET-2017, SAC, Ahmedabad, 7 Nov. 2017.

18. *Oral:* "Land-climate interactions and its role in the prediction of the Indian summer monsoon" by **S. Halder**, P. A. Dirmeyer, J. Kinter and B.N. Goswami, IIT Mumbai, 22 Dec. 2016.

17. *Poster:* "Reforecasting the ENSO Events in the Past Fifty-Seven Years (1958-2014)" by B. Huang, C.S. Shin, J. Shukla, L. Marx, M. A. Balmaseda, **S. Halder**, P. Dirmeyer, J. L. Kinter III, AGU Fall Meeting, San Francisco, 12-16 Dec. 2016.

16. *Poster*: "Sensitivity of numerical forecasts to initial soil moisture variations in CFSv2: Implications for hydrological forecasts" by **S. Halder** and Paul A. Dirmeyer, India-UK Workshop on 'Developing Hydro- climatic Services for Water Security', IITM, Pune, 29 Nov. - 1 Dec. 2016.

15. *Oral:* "Impact of soil moisture variability on the Indian monsoon" by **S. Halder**, P. A. Dirmeyer, L. Marx and J. L. Kinter III, Second Annual Mason Water Research Symposium, George Mason University, 18 Mar. 2016.

14. *Oral:* "Impact of land surface initialization on seasonal forecast of the extremes of Indian summer monsoon" by **S. Halder**, P. A. Dirmeyer, L. Marx and J. L. Kinter III, at the 96th AMS meeting, N. Orleans, USA, Jan. 2016.

13. *Poster:*"Potential regions of strong land-atmosphere coupling based on the S2S project database: Implications for the Indian summer monsoon, by **S. Halder**, P. A. Dirmeyer, B. Cash and J. Adams, at the AGU Fall meeting, San Francisco, USA, 16 Dec. 2015.

12. *Poster:* "Relation of Eurasian snow cover and Indian summer monsoon rainfall: Delayed hydrological effect" by **S. Halder** and P. A. Dirmeyer, at the 40th Climate Diagnostics and Prediction Workshop, Denver, USA, 26-29 Oct. 2015.

11. Oral: "Ocean-Land-Atmosphere coupling and initialization strategies to improve CFSv2 and monsoon prediction" by J.L. Kinter III, R. Bombardi, M. Fennessy, B. Huang. **S. Halder**, L. Marx, E. K. Schneider, J. Shukla, R. Shukla, C. S. Shin and B. Singh, at the ESSO, Ministry of Earth Sciences, Govt. of India, National Monsoon Mission (NMM) Review Meeting, IITM, Pune, India, 19 Feb. 2015.

10. *Oral:* "Promises and prospects for predicting the South Asian monsoon" by J. L. Kinter III, P. A. Dirmeyer, B. Huang, E. K. Schneider, R. Bombardi, **S. Halder**, C. S. Shin, R. Shukla and B. Singh, 95th AMS meeting, Phoenix, 8 Jan. 2015.
9. *Oral:* "Confronting global land-atmosphere models with coupled process metrics" P. A. Dirmeyer, A. Tawfik, **S. Halder**, H. Norton, J. Wu. M. G. Bosilovich, J. A. Santanello, M.B. Ek and G. Balsamo, 95th AMS meeting, Phoenix, 5 Jan. 2015.
8. *Poster:* "Initialization and coupled land-atmosphere feedbacks in the CFSv2 model during the South Asian monsoon" by **S. Halder**, P.A. Dirmeyer, L. Marx and J.L. Kinter III, 95th AMS meeting, Phoenix, AZ, 8 Jan.2015.
7. *Oral:* "An initial assessment of coupled land-atmosphere memory in (and beyond) reanalysis" by P. A. Dirmeyer, Z. Guo, **S. Halder**, H. Norton and J. Wu, 39th Climate Diagnostics and Prediction Workshop, St. Louis, Missouri, 20 Oct. 2014.\
6. *Oral*: "Potential predictability of zonal winds in the model CFSv1", project by **S. Halder** and participants, at the ESSO-IITM-ICTP TTA at IITM, 14-25 Jan. 2013.
5. *Poster*: "Land Surface Processes and Internal Variability of Indian Summer Monsoon" by **S. Halder**, S. K. Saha, K. Krishna Kumar and B. N. Goswami, AGU 2012 Fall Meeting, San Francisco, USA, 3-7 Dec. 2012.
4. *Poster*: "Land-Atmosphere Feedback and Internal Variability of Indian Summer Monsoon" by **S. Halder**, S. K. Saha, K. Krishna Kumar and B. N. Goswami, International Workshop on "Land- Atmosphere Interactions at the Regional Scale", Madrid, Spain, 8-10 Oct. 2012.
3. *Poster*: "Changes in Indian summer monsoon rainfall and temperature induced by land-use land-cover during past 50 years" by **S. Halder** and S. K. Saha, International Conference OCHAMP, I.I.T.M., Pune, 21-25 Feb.,2012.
2. *Oral:* "Pre-onset land surface processes and 'internal' interannual variabilities of the Indian summer monsoon" by **S. Halder**, S. K. Saha, K. Krishna Kumar and B. N. Goswami, International EU-IndiaGrid2 Material Science, Climate Change & Interoperability Workshop, IIT, Delhi, India, 13-16 Dec. 2010.
1. *Poster:* "Studies of Nor'westers over Gangetic Bengal" by **S. Halder** and P. Mukhopadhyay, Raman Memorial Conference, organized by the Dept. of Physics, Univ. of Pune, Pune, India, 24-25 Feb. 2006.

18. Collaborators (International and national)

- Prof. Paul A. Dirmeyer, George Mason University, Fairfax, Virginia, USA, pdirmeye@gmu.edu
- Prof. James L. Kinter III, George Mason University, Fairfax, Virginia, USA, ikinter@gmu.edu
- Prof. Jagadish Shukla, George Mason University, Fairfax, Virginia, USA, jshukla@gmu.edu
- Prof. Bohua Huang, George Mason University, Fairfax, Virginia, USA
- Prof. Thomas N. Chase, CIRES, University of Colorado, Boulder, USA
- Prof. B. N. Goswami, SERB Distinguished Fellow, Cotton College, Gauhati University, Gauhati, Assam, India, bhupengoswami100@gmail.com

19. Professional Affiliations

- Life member of the Indian Meteorological Society, New Delhi; the Indian Geophysical Union, Hyderabad and the Indian Science Congress Association, Kolkata, India
- Member of the American Geophysical Union, USA, the American Meteorological Society and the European Geophysical Union, UK

Date: 30 Dec, 2020
Varanasi, UP, India

Sd./-
Dr. Subhadeep Halder